

NPIC/TSSG/DED-1610-69  
6 May 1969

MEMORANDUM FOR: Chief, Development & Engineering Division

SUBJECT : Discussions with [REDACTED]

1. On 22 April 1969, I visited [REDACTED]  
for discussions on the topics indicated and described below:

- a. Line Scan Image Production for [REDACTED] project (G.O.B.)
- b. Objective-Subjective Image Quality Measures and Correlation
- c. Image Processing Program
- d. [REDACTED] General Capabilities

2. Line Scan Support for HFR Project

a. The preliminary arrangements for obtaining the controlled line-scan images were made. [REDACTED] accompanied me for this part of the discussions. [REDACTED] will submit a list of line scan image requirements before making a formal demand on [REDACTED]

b. [REDACTED] has performed line-scan studies for Ft. Belvoir, Night Vision Lab. These were reviewed in detail. They will provide background for future line-scan projects for NPIC. Copies of the final reports will be obtained soon.

3. Objective-Subjective Image Quality Studies

[REDACTED] has pioneered in this area. Their present efforts are presently funded internally and are restricted in scope. The research considers the effect of signal and noise on quality judgments by human observers. This broad approach considers conventional measures and new ones developed by [REDACTED] involving the response of the eye. They admit having a long way to go. The beginning is impressive, the potential great. [REDACTED] provided several reports of effort so far; the details will be studied with a view toward incorporation to some degree in our image analysis research program.

GROUP 1  
Excluded from automatic  
downgrading and  
declassification

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4. Image Processing Program

a. The program was reviewed in some detail by [ ]  
It was designed two years ago and presented to NPIC in a comprehensive proposal in response to the ATR solicitation. They have polished the system somewhat, at their expense, in the interim. It is the most conceptually sound, experimentally advanced, well structured and costly program reviewed to date.

b. In summary, they describe a three-year effort culminating in an optical analog-digital hybrid with a variety of input and output options. Target detection, recognition, identification, enhancement, and counting are some of the operations that have been studied with varying but positive indications of success. The estimated cost is 3 million for a complete prototype.

25X1 c. The key difference between the [ ]  
approach is that [ ] has included both digital and optical data processing options, recognizing that each has positive, and in many cases, offsetting features. For instance, the incredibly long input scanning times inherent with digital systems is largely overcome with the optical input operating in real time.

25X1 d. The [ ] system should not be compared in detail  
25X1 with [ ]. The latter are concerned with producing  
25X1 P.I. automated aids. While [ ] has no objection to this application, the system is not optimized for it. The [ ] hardware has potential as a research tool, especially in color. Therefore, the possibility of contractual support will be considered. The [ ] software developed is extensive and could be of great value generally.

25X1 e. [ ] is also considering laser scanning techniques. I was not able to discuss this area because of time. The topic will be included in my study of image processing systems.

5. General Capabilities

25X1 The physical plant and personnel expertise are impressive and of direct interest in the areas of Image Analysis, Reconnaissance Systems, Interferometry and cloud detection. The latter topic does not appear to be as advanced as the [ ] effort, though with the same degree of development it could be. I have discussed this with [ ] and

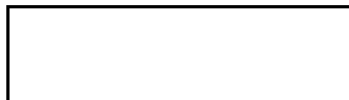
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we agree that no purpose would be served by pursuing this further at this time. The [REDACTED] camera and optical design divisions will be visited on a subsequent trip; work in image analysis is of high caliber and will be considered as the long-range program in this area is developed.



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Distribution:

Original - Addressee

1 - NPIC/TSSG/DED files

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(6 May '69)